



SIKA AT WORK

TRAM RAILWAY RECONSTRUCTION, DAUGAVPILS, LATVIA

ELASTIC RAIL FIXING: Icosit® KC 340/45

BUILDING TRUST



TRAM RAILWAY RECONSTRUCTION, DAUGAVPILS, LATVIA

PROJECT DESCRIPTION

The project scope anticipated a replacement of tram rail types 60R2 and 62R2 with a length of 3165 m in total. 2589 m of those were directly placed on wooden sleepers. 500 m were placed on reinforced concrete slabs using Continuous Undersealing with an elastic 2-part polyurethane grout between the rails and slabs. 76 m were built as Embedded Rail System (ERS). For all replaced rails, elastic filler blocks are used that were adhered to rail with an elastic PU adhesive. As a protective coating of the concrete elements, a polymer-modified, bitumen-based, liquid applied membrane (LAM) was used.

PROJECT REQUIREMENTS

To rebuild existing tram railways using 3 structural types of assembly by providing 8-10% reduction of noise in comparison with the situation before reconstruction:

1. Rails on wooden sleepers placed directly by adhering composite rubber filler blocks to the rails.
2. Rails on reinforced concrete slabs placed by using a 2-part polyurethane elastic compound to reduce noise and vibration as well as stray currents.
3. On most intensive trafficked road crossing, rails must be placed embedded in grooves of concrete slabs using a 2-part polyurethane elastic compound.

For the whole project, rubber composite filler blocks must be applied and fixed on sides of rails.

TRAM RAILWAY RECONSTRUCTION, DAUGAVPILS, LATVIA



SIKA SOLUTION

- Ad 1. Ballasted track – Wooden sleepers with a rail to which Sika® Icosit® 60R2 Rail Filler Block Sleeper made of rubber are fixed with 1-part polyurethane adhesive SikaBond®-139 Filler Block.
- Ad 2. Ballastless track – Continuous Undersealing of the rails with using Icosit® KC 340/45, 2-part polyurethane elastic compound to reduce secondary noise and vibration, as well as stray currents to which Sika® Icosit® 60R2 Rail Filler Block Slab made of rubber are fixed with 1-part polyurethane adhesive SikaBond®-139 Filler Block on reinforced concrete slabs.
- Ad 3. Ballastless track – Embedded Rail System with using Icosit® KC 340/45, 2-part polyurethane elastic compound and Sika® Icosit® 60R2 Rail Filler Block ERS made of rubber are fixed to the rail with 1-part polyurethane adhesive SikaBond®-139 Filler Block on reinforced concrete slabs with using Icosit® KC 340/45, 2-part polyurethane elastic compound to reduce secondary noise and vibration, as well as stray currents.

For protection of reinforced concrete elements against soil moisture, initially Sika® Igoflex®-101 was offered and supplied. Later, as an alternative, Igoflex®-2K was supplied, which was acknowledged as an even more appropriate product and used until the project's end. Finally, we got positive response from the General Contractor regarding collaboration with Sika even in these challenging times for supply of products.

PRODUCTS USED

- Icosit® KC 340/45, 2-part PU elastic compound (total: 4'900 kg)
- Icosit® KC Primer (105 L)
- SikaBond®-139 Filler Block, elastic 1-part PU adhesive 600 ml (total: 1'400 pc/840 L)
- Sika® Icosit® Rail Filler Blocks, granulated recycled rubber-based noise dampening elements – 11 types of elements (total: 61'233 kg)
- Sika® Igoflex®-101, polymer modified bitumen-based waterproofing (total: 1'664 L)
- Igoflex®-2K, polymer modified bitumen-based 2-part waterproofing (total: 7'056 kg)

PROJECT PARTICIPANTS

Client:	Municipality of Daugavpils City
Designer:	"BRD Projekts" SIA
Contractor:	"A.C.B." AS
Railway Subcontractor:	"Rail Balt" SIA
Supplier:	Sika Baltic SIA (Latvia)

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

BUILDING TRUST

